PATENT CLAIMS

1. A method for improving imaging properties of at least two optical elements, at least one of which being a movable optical element, said method comprising the following steps:

a) determining for at least one of the at least two optical elements a polarisation-dependent perturbation;

b) determining for at least one of the at least two optical elements a polarisation-independent perturbation;

c) calculating a target position for the at least one movable optical element such that, in the target position, the total perturbation of the at least two optical elements which is made up of the polarisation-dependent perturbations and polarisation-independent perturbations of the at least two optical elements, is minimized;

d) moving the at least one movable optical element to the target position calculated in step c).

2. The method of claim 1, in which the polarisation-dependent perturbation includes stress birefringence.

3. The method of claim 2, in which the at least one optical element, whose polarisation-dependent perturbation is determined according in step a), consists

of a crystalline material, and in which the determination of the polarisation-dependent perturbation resulting from stress birefringence comprises a determination of the position of at least one crystal axis.

4. The method of claim 1, in which the at least one movable optical element is rotated in step d) about its axis of symmetry.

5. The method of claim 1, in which the at least one movable optical element is linearly displaced.

6. The method of claim 1, in which the at least one movable optical element is displaced transversely to an optical axis.

7. The method of claim 1, in which the at least one movable optical element is tilted relative to an optical axis.

8. The method of claim 1, in which the polarisation-dependent perturbation for the at least one optical element is determined in step a) while this at least one optical element is supported in a frame.

9. A photolithographic method for fabricating semiconductor components by using optical elements whose imaging properties have been improved by the method of claim 1.

10. The photolithographic fabrication method of claim 9, in which projection light is used that has a wavelength smaller than 200 nm.